

CLAIMS:

1. A method comprising:
receiving information from a subscriber unit of a wireless communication system, the information being indicative of signals detected by the subscriber unit in the wireless communication system;
dividing an area where the subscriber unit is suspected to be into a plurality of sectors; and
scoring the sectors based on the information, wherein a score for a respective sector indicates a likelihood that the subscriber unit is in the respective sector.
2. The method of claim 1, further comprising scoring the sectors based on the information for each of a plurality of timing errors hypothesized for the subscriber unit.
3. The method of claim 1, further comprising:
identifying a subset of the sectors that have high scores; and
sending position assistance information to the subscriber unit based on the subset of the sectors.
4. The method of claim 3, wherein the position assistance information identifies a set of global positioning system (GPS) satellites.
5. The method of claim 1, further comprising:
identifying a subset of the sectors that have high scores;
dividing each of the subset of sectors that have high scores into sub-sectors; and
scoring the sub-sectors based on the information, wherein a score for a given sub-sector indicates a likelihood that the subscriber is in the given sub-sector.
6. The method of claim 5, further comprising:
identifying a subset of the sub-sectors that have high scores; and
sending position assistance information to the subscriber unit based on the subset of the sub-sectors.

7. The method of claim 5, further comprising:
identifying a subset of the sub-sectors that have high scores;
dividing each of the subset of sub-sectors into sub-sub-sectors;
scoring the sub-sub-sectors;
identifying a subset of the sub-sub-sectors that have high scores; and
sending position assistance information to the subscriber unit based on the subset of the sub-sub-sectors.
8. The method of claim 1, wherein the information includes phase offsets relative to system time, determined from the signals detected by the subscriber unit.
9. The method of claim 1, further comprising:
identifying a first subset of the sectors that have high scores;
identifying a second subset of the sectors by removing one or more sectors from the first subset based on a determination that the one or more sectors correspond to a location of a repeater in the wireless communication system; and
sending position assistance information to the subscriber unit based on the second subset of the sectors.
10. The method of claim 1, wherein scoring the sectors includes increasing a given score of a given sector when one or more detected signals correlate with expected signals of one or more base stations in proximity to the given sector.
11. The method of claim 1, wherein scoring the sectors includes modifying a given score of a given sector when a repeater is associated with the given sector.
12. A method comprising:
receiving information from a subscriber unit of a wireless communication system, the information being indicative of signals detected by the subscriber unit in the wireless communication system;
identifying two or more probable locations of the subscriber unit based on the information; and
sending position assistance information to the subscriber unit based on the two

or more probable locations.

13. The method of claim 12, wherein the position assistance information identifies a set of global positioning system (GPS) satellites.

14. A method comprising:
detecting signals associated with base stations of a wireless communication system;
sending information from a subscriber unit, the information being indicative of the detected signals; and
receiving position assistance information that identifies two or more probable locations of the subscriber unit.

15. The method of claim 14, wherein the position assistance information identifies a set of global positioning system (GPS) satellites.

16. The method of claim 15, further comprising identifying a position of the subscriber unit using signals from one or more satellites in the set of GPS satellites.

17. A computer-readable medium comprising computer-readable instructions that when executed in a position determination entity (PDE) cause the PDE to:
divide an area where a subscriber unit of a wireless communication system is suspected to be into a plurality of sectors; and
score the sectors based on information received from the subscriber unit, the information being indicative of signals detected by the subscriber unit in the wireless communication system, wherein a score for a respective sector indicates a likelihood that the subscriber is in the respective sector.

18. The computer-readable medium of claim 17, further comprising instructions that cause the PDE to score the sectors based on the information for each of a plurality of timing errors hypothesized for the subscriber unit.

19. The computer-readable medium of claim 17, further comprising instructions that cause the PDE to:

- identify a subset of the sectors that have high scores; and
- send position assistance information to the subscriber unit based on the subset of the sectors.

20. The computer-readable medium of claim 17, further comprising instructions that cause the PDE to:

- identify a subset of the sectors that have high scores;
- divide each of the subset of sectors that have high scores into sub-sectors; and
- score the sub-sectors based on the information, wherein a score for a given sub-sector indicates a likelihood that the subscriber is in the given sub-sector.

21. The computer-readable medium of claim 20, further comprising instructions that cause the PDE to:

- identify a subset of the sub-sectors that have high scores; and
- send position assistance information to the subscriber unit based on the subset of the sub-sectors.

22. The computer-readable medium of claim 20, further comprising instructions that cause the PDE to:

- identify a subset of the sub-sectors that have high scores;
- divide each of the subset of sub-sectors into sub-sub-sectors;
- score the sub-sub-sectors;
- identify a subset of the sub-sub-sectors that have high scores; and
- send position assistance information to the subscriber unit based on the subset of the sub-sub-sectors.

23. The computer-readable medium of claim 17, further comprising instructions to cause the PDE to increase a given score of a given sector when one or more detected signals correlate with one or more base stations in proximity to the given sector.

24. The computer-readable medium of claim 17, further comprising instructions to cause the PDE to modify a given score of a given sector when a repeater is associated with the given sector.

25. A position determination entity (PDE) of a wireless communication system, the PDE comprising:

a receiver to receive information from a subscriber unit of the wireless communication system, the information being indicative of signals detected by the subscriber unit in the wireless communication system; and

a processor to divide an area where the subscriber unit is suspected to be into a plurality of sectors and score the sectors based on the information, wherein a score for a respective sector indicates a likelihood that the subscriber is in the respective sector.

26. The PDE of claim 25, wherein the processor scores the sectors based on the information for each of a plurality of timing errors hypothesized for the subscriber unit.

27. The PDE of claim 25, wherein the processor identifies a subset of the sectors that have high scores, the PDE further comprising a transmitter to send position assistance information to the subscriber unit based on the subset of the sectors.

28. The PDE of claim 25, wherein the processor identifies a subset of the sectors that have high scores, divides each of the subset of sectors that have high scores into sub-sectors, and scores the sub-sectors based on the information, wherein a score for a given sub-sector indicates a likelihood that the subscriber is in the given sub-sector.

29. The PDE of claim 28, wherein the processor identifies a subset of the sub-sectors that have high scores, the PDE further comprising a transmitter to send position assistance information to the subscriber unit based on the subset of the sub-sectors.

30. The PDE of claim 28, wherein the processor identifies a subset of the sub-sectors that have high scores, divides each of the subset of sub-sectors into sub-sub-sectors, scores the sub-sub-sectors and identifies a subset of the sub-sub-sectors that have high scores, the PDE further comprising a transmitter to send position assistance information to the subscriber unit based on the subset of the sub-sub-sectors.

31. The PDE of claim 25, wherein the information includes phase offsets relative to system time, determined from the signals detected by the subscriber unit.

32. The PDE of claim 25, wherein the processor identifies a first subset of the sectors that have high scores, and identifies a second subset of the sectors by removing one or more sectors from the first subset based on a determination that the one or more sectors are a location of a repeater in the wireless communication system.

33. The PDE of claim 25, wherein the processor scores the sectors by increasing a given score of a given sector when one or more detected signals correlate with one or more base stations in proximity to the given sector.

34. The PDE of claim 25, wherein the processor scores the sectors by modifying a given score of a given sector when a repeater is associated with the given sector.

35. An apparatus comprising:
means for receiving information from a subscriber unit of a wireless communication system, the information being indicative of signals detected by the subscriber unit in the wireless communication system; and
means for dividing an area where the subscriber unit is suspected to be into a plurality of sectors; and
means for scoring the sectors based on the information, wherein a score for a respective sector indicates a likelihood that the subscriber is in the respective sector.

36. The apparatus of claim 35, further comprising means for scoring the sectors based on the information for each of a plurality of timing errors hypothesized for the subscriber unit.